REMARKS

Applicant appreciates the continued thorough examination of the present application that is reflected in the nonfinal Official Action of October 24, 2006. However, as will be shown below, the claims are unobvious over U.S. Patent 6,483,196 to Wojnarowski et al. in combination with U.S. Patent Application Publication 2004/0072106 to Chua et al. Accordingly, Applicant respectfully requests withdrawal of the outstanding rejection and allowance of the present application, for the reasons that now will be described.

Independent Claim 1 Is Patentable Over Wojnarowski et al. In View of Chua et al.

Independent Claim 1 recites:

> 1. A semiconductor light emitting device comprising:
> a substrate having a face;
> a flexible film that includes therein an optical element, on the face;
> and
> a semiconductor light emitting element between the substrate and the flexible film and configured to emit light through the optical element.

Claim 1 stands rejected under 35 USC §103(a) over Wojnarowski et al. in combination with Chua et al. However, in citing Figure 12 and the related text of Wojnarowski et al., the Official Action concedes that Wojnarowski et al. fails to teach that the flexible film includes therein an optical element. In an unsuccessful attempt to supply the missing teaching, the Official Action cites Chua et al. as teaching "design silicone based material to function as a lens or an optical element over a LED see [0034]" (Official Action, Page 2).

However, the only relevant sentence of Paragraph [0034] of Chua et al. states:

> A liquid polymer system, such as polypropylene, polycarbonate, epoxy resin, or silicone, is used to construct a lens over the LED chip.

This sentence only says that a conventional liquid polymer system is used to construct a lens over the LED chip. This lens is described, for example, Paragraph [0004] of Chua et al., which describes the conventional LED of Figure 1 of Chua et al., as including "an epoxy lens **32**". Moreover, Paragraph [0005] of Chua et al. describes other conventional LEDs of Figures 2A and 2B as including an epoxy lens **50** that is molded over the phosphor epoxy coating **46**. Accordingly, the only disclosure in Chua et al. appears to be a conventional dome-shaped polymer lens that is conventionally used to form the outer package of an LED.

Applicant wishes to note that, to establish a *prima facie* case of obviousness, the prior references when combined must teach or suggest all the recitations of the claims, and there

must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to combine reference teachings. *See* MPEP § 2143. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art ***also suggests the desirability of the combination***. *See* M.P.E.P. § 2143.01(citing *In re Mills*, 916 F.2d 680, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990)). As emphasized by the Court of Appeals for the Federal Circuit, to support combining references, evidence of a suggestion, teaching, or motivation to combine must be ***clear and particular***, and this requirement for clear and particular evidence is not met by broad and conclusory statements about the teachings of references. *In re Dembiczak*, 50 U.S.P.Q.2d 1614, 1617 (Fed. Cir. 1999). In another decision, the Court of Appeals for the Federal Circuit has stated that, to support combining references, there must be particular evidence from the prior art as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed. *In re Kotzab*, 55 U.S.P.Q.2d 1313, 1317 (Fed. Cir. 2000).

Figure 12 of Wojnarowski et al. describes the use of flexible silicone rubber (RTV) **44** to encapsulate an LED. There is no description or suggestion whatsoever to provide an optical element in this RTV **44**. Moreover, many of the other figures of Wojnarowski et al. describe the use of a polymer lensing material **28**, **30** or **38** above the LED. Accordingly, Wojnarowski et al. would appear to actually teach away from incorporating an optical element in the RTV **44**. Only the present application includes a recognition to incorporate an optical element into a flexible film. As noted in the present application, for example at Page 12, line 31-Page 13, line 5:

> The flexible film **120** incorporates one or more optical elements **130** to achieve a desired optical design. Being made of a flexible material, the flexible film **120** can conform to the semiconductor light emitting device as it expands and contracts. Moreover, in some embodiments, the flexible film can be fabricated by simple low cost techniques such as transfer molding, injection molding and/or other techniques, and may include multiple optical elements and/or other features on either side of the flexible film membrane. This may permit a "single" placement of a complex optical element upon a package (or substrate to a package) that can include multiple LED emitters.

The secondary reference Chua et al. teaches a conventional LED with a conventional molded polymer dome lens **32/46**. These polymer lenses are well known, as noted in the present application, for example at Page 13, lines 6-13:

> Conventionally, LED packages use a lens molded from rigid plastic or glass. Either a hard encapsulant is used to encapsulate the chip and form the optical element, or a lens is applied upon an optical coupling media, such as an optical gel, for example Nye optical gel. The hard encapsulant may be plagued by optical degradation and high stress on LED chips, and power LED chips in particular, and the optical coupling media may also potentially create problems because this gel may be exposed on the surface of the part which may result in trapping of dust/debris on the exposed material due to the stickiness of the gel.

However, as also noted in the present application, for example at Page 13, lines 13-19:

> In contrast, flexible films **120** according to some embodiments of the present invention can be the terminating surface of the package using an optical coupling media **170**, and also includes the optical elements **130**, such as one or more optical lens. The ability to place one unit (the flexible film with multiple optical elements) can potentially provide a benefit when using a package that has multiple LEDs in it. Instead of placing a lens for each LED, the single placement of a flexible film **130** can be provided.

Accordingly, it would not be obvious to incorporate an optical element into Wojnarowski et al.'s silicone RTV **44** based on the teachings of Wojnarowski et al. Moreover, the mere existence of molded optical lenses, such as described in the present application or in the secondary reference Chua et al., would not suggest providing this lens in the RTV **44**.

Stated differently, there is no motivation to combine Wojnarowski et al. and Chua et al., and the "motivation" provided at Page 2 of the Detailed Action, "because the presence of the lens would provide focus or diffusion emitted light to outside", is not the clear and particular motivation that is required by the MPEP and case law cited above. Finally, even if there was some motivation to combine Wojnarowski et al. and Chua et al., the combination would teach an RTV encapsulating film and a molded dome lens above it. Only the present application describes or suggests the desirability of incorporating an optical element into a flexible film, such that a semiconductor light emitting element emits light through the optical element. For at least these reasons, Claim 1 is patentable over Wojnarowski et al. in view of Chua et al.

Many of the Dependent Claims Are Separately Patentable

Dependent Claims 2, 15, 19-21, 23-25 and 47 are patentable at least per the patentability of independent Claim 1 from which they depend. Moreover, many of the dependent claims are separately patentable.

For example, amended Claim 2 recites:

> 2. A device according to Claim 1 wherein the face includes a cavity therein, wherein the flexible film extends onto and is attached to the face beyond the cavity, wherein the optical element overlies the cavity and wherein the semiconductor light emitting element is in the cavity. (Emphasis added.)

In rejecting Claim 2, the Official Action again states, at Page 2:

> With respect to claims 2 and 47, Wojnarowski et al. further teach the face includes a cavity therein, wherein the flexible film extends onto the face beyond the cavity, wherein the semiconductor light emitting element is in the cavity. (Emphasis added.)

Applicant respectfully submits that the above-underlined assertion regarding amended Claim 2 is simply not accurate. In particular, in Wojnarowski et al. Figure 12, the flexible film **44** is confined totally to within the cavity, and does not extend beyond the cavity, as recited in amended Claim 2. There is also no attachment of the flexible film to the face beyond the cavity, as recited in amended Claim 2. Accordingly, amended Claim 2 is independently patentable. Similar analysis applies to amended Claim 47. Applicant wishes to note that the exact same rejection of Claims 2 and 47 was made in the previous Official Action, and Applicant pointed out the above deficiencies in the response of September 25, 2006. Yet, the present Official Action merely repeats these rejections, verbatim, without addressing these deficiencies.

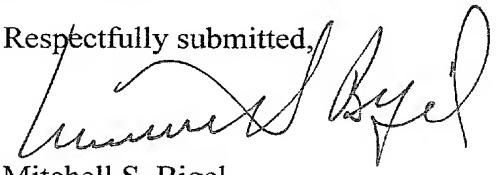
Dependent Claim 15 recites the use of multiple optical elements in a single flexible film. Wojnarowski et al. Figure 12 describes a single silicone rubber layer overlying a single LED. Chua et al. describes a single lens overlying a single LED. Accordingly, there is no teaching, absent the present application, that a single flexible film can include multiple optical elements therein, which are arranged to correspond to multiple light emitting elements. Moreover, the rationale for obviousness provided at Page 3 of the Official Action "to increase device integration density" may not even be a motivation for optical devices wherein the device integration density may be governed by other external factors, and, in any event, does not provide the particular motivation that is required by the MPEP and case law that were cited above. Finally, Applicants submit that neither Wojnarowski et al. nor Chua et al. provides any motivation to provide multiple optical elements in a single flexible film. Similar analysis applies to pending Claims 19-21, 23-25 and 47. Moreover, Claim 25 is independently patentable because Claim 25 defines an architecture that can provide red, green and blue emitters using a flexible film and multiple phosphor layers. None of the cited

references describes or suggests this architecture. Applicant also wishes to note that the exact same rejections of these claims was made in the previous Official Action, and Applicant pointed out the above deficiencies in the response of September 25, 2006. Yet, the present Official Action merely repeats these rejections, verbatim, without addressing these deficiencies.

Conclusion

Applicant again appreciates the thorough examination. However, Applicant has shown that the primary reference is devoid of any description or suggestion of incorporating an optical element into a flexible film that overlies a semiconductor light emitting element, and that the existence of polycarbonate or other dome lenses for packaging LEDs, as described in the secondary reference and/or the present application, does not supply the missing teachings. For at least these reasons, Claim 1 is patentable over the cited references. Moreover, many of the dependent claims are separately patentable. Finally, in view of the clear patentability of Claim 1, Applicant respectfully requests rejoinder, examination and allowance of all of the pending Claims 1-34 and 47.

Respectfully submitted,



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